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by

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THE JOURNAL OF PHILOSOPHY

THE LOGIC OF LOGICAL POSITIVISM

LOGIC, traditionally, has been the bugbear of empirical philosophies. From Sextus Empiricus and William of Ockham through the British empiricists, the problem of dealing adequately with the certainty and necessity claimed for deductive logic has always seemed to defy an empirical solution. It is the presumed achievement of the members of the *Wiener Kreis* that this treatment finally has been carried through successfully. The newer empiricists style themselves "*logical* positivists" precisely because of their special efforts to develop a theory which shall satisfy the just claims of logic and shall be at the same time congenial to the empiricist temper. It is the success of this accomplishment which I question in this paper.

I

According to Carnap, the propositions of logic are sets of resolutions governing the use of language, and language systems may be developed arbitrarily and indefinitely. His theory may be formulated in terms of four crucial words: a logic is any set of (1) formal (2) rules governing the (3) syntax of a (4) language. (1) By formal, Carnap means totally independent of meanings. The rules of logic refer to words as marks or as sounds, and as nothing else. (2) The rules are arbitrary, or at least alogically selected, resolutions. Their choice is not dictated by any consideration except convenience, and even that, if one is sufficiently perverse, may be disregarded. (3) By the syntax of a language is meant the arrangements of the words into sentences, and the rules of syntax may designate which groups of words are to constitute significant sentences in the language (formation rules) or may specify which groups of words are substitutible for ("equivalent" to) others (transformation rules). (4) The language concerned may be any language, natural or artificial, convenient or inconvenient, "logical" or "illogical" (in the traditional senses).

An important implication of this theory is that the "laws of logic" are not absolute but relative to a given language system. The "laws of logic" prescribe the operations which within a given language are to be considered permissible. But there is no compulsion

to stay within any given language system. The languages which exist are many and various in character; and artificial languages may be constructed without end. As long as one accepts some particular set of language-rules, he is bound by them; but if it ceases being convenient for him to do so, or even merely if the whim strikes him, he may reject that set in favor of any other set which may appeal to him. In logic, as Carnap strikingly puts it, there are no morals. *"Jeder mag seine Logik, d. h. seine Sprachform, aufbauen wie er will,"*[1] although, in the interests of communicability, one should designate which language system he is using, and remain faithful to it.

If the linguists intend their definition of logic merely as a new way which they have adopted because it happens to appeal to them, of using an old term, then, although one may feel somewhat resentful at their depriving a term of connotation rightfully belonging to it by long historical association, one has essentially no quarrel with them. One can define his words as he pleases; verbal definition is purely arbitrary. If I resolve to use the word "the Constitution" for blue-eyed beagles with rose-tinted toe nails on the left forepaw, I may be departing from tradition and I may, as a matter of fact, never use the term as thus defined, but although one may feel surprised at my eccentric tastes, no one can say me nay. Verbal definitions are arbitrary, and are neither true nor false. "Real" definitions, however, may be true or false, for they analyze the content of concepts denoted by words whose meaning is accepted. One accepts, e.g., the definition of the term "logic" as denoting a certain set of propositions and attempts to describe more fully the nature of those propositions.

It is this latter type of definition which Carnap is presenting. Thus he refers to *Principia Mathematica* and illustrates "formal" analysis with the use of the principles of the excluded middle, the syllogism, etc.[2] In other words, he is describing the character of traditional logic and saying that the laws of logic are laws governing the manipulation of marks, and nothing else. He is presenting a *real* definition, and therefore what he says about *Principia Mathematica,* e.g., may be true or false.

(1) It is false, in the first place, because of a confusion as to the meaning of "formal." Propositions are formal, says Carnap, when they concern linguistic expressions without any reference to sense or meaning.[3] But the propositions of logic are not formal in this sense. They do not refer to *particular* propositions, but they do refer to

[1] *Logische Syntax der Sprache,* p. 44.

[2] *Philosophy and Logical Syntax,* pp. 43–50.

[3] *Ibid.,* p. 39. Cf. *Logische Syntax der Sprache,* p. 1.

propositions. A proposition of logic, e.g. $p \supset \sim (\sim p)$, is formal in the sense that it expresses a form such that—irrespective of specific meaning or truth value—all propositions which may be so grouped as to correspond to that form are true. p might be a proposition about the lost island of Atlantis or the stereochemistry of hydrochloric acid, but when arranged with its negative in the form designated, it constitutes a true molecular proposition. What sense the p's and q's and r's of logic have is immaterial; but they must have some sense in order to be propositions. Blank marks without meaning are not propositions. Form has relation to generality, and it is by reason of the fact that the principles of logic refer to propositions in general that they are said to be formal.

The logician "formalizes" a proposition like "Rip Van Winkle sleeps" first by putting a blank in place of the "sleeps," for it is unimportant to him whether Rip Van Winkle sleeps or bowls or quarrels with his wife or what not; and then he puts a blank in place of "Rip Van Winkle," for, as far as he is concerned, it might just as well be George Washington or Charlie Chaplin or Genghis Khan or anyone else, in the world or out of it. And so, instead of a sentence with meaning, the logician has two (or more) blanks: ——— ———, or, in the format of the day, $\phi(x \ldots)$. It is natural to conclude that the logician has stopped talking about anything. On the contrary, however, instead of saying less, he is saying more—much more. Instead of talking merely about Rip Van Winkle, he is talking about George Washington, Charlie Chaplin, cabbages and kings, etc., etc. And not content with talking about sleeping, he talks also about creeping and peeping and leaping and reaping, etc., etc. He is not talking about nothing in particular; he is talking about everything in particular. That is the great virtue of a generality: it encompasses so many particulars. To formalize is not to get away from meaning: it is to get away from any *one* particular meaning, which is quite something else indeed.

The matter may be clarified if we sketch the elements in the symbolic situation. If I say, e.g., "Roses are red," there is (*a*) in the first place my thinking, believing, judging, doubting, or considering. All these are psychological matters, and a proposition as a psychological entity has usually been called "the judgment." (*b*) There is next the particular set of noises which issue from me when I say the sentence, or the particular set of marks on paper which I write on paper. These are purely physical objects and may be studied in their several aspects by the physical sciences of acoustics, chirography, linguistics, physics, chemistry, etc. (*c*) In addition, there is the state of affairs to which the marks refer. There are the actual roses and the actual rednesses and the actual red roses. If

the proposition is true, the state of affairs is an actual state of affairs, i.e., a fact. If the proposition is false, then the state of affairs is a mere conceptual possibility. (How "real" the state of affairs is to which a false proposition refers does not concern me here.) This possible or actual state of affairs to which a proposition refers is what is usually called the "meaning" of a proposition. (*d*) But finally, in addition to the thinking and the marks and the state of affairs, there are the marks *as referring* to the state of affairs. When marks become symbols, they take on, in Peirce's phrase, an indexical character, for they point to entities beyond themselves. How and why they have this indexical character is an important and subtle question, treated in various books on meaning. But they do have it—else they are not symbols. Logic is the science of symbols, not of marks, and to say the former is not to say the latter.

A case might be made out that "formal" for the logician means just the opposite of what it means for Carnap. It means that the relations between propositions described in logic hold *irrespective* of the language in which the propositions are expressed. A proposition implies the negative of its contradictory in Chinese as in French, in Hindustan as in Arabic, in German as in English. Logic is "formal" precisely because it disregards linguistic factors in its concern for generality. The "formalism" of the generalizing logician is incompatible with the "formalism" of the linguist who is interested in particular marks and particular sounds.

(2) As a methodological maxim, it may be desirable in the working out of a system of logic, to operate entirely with marks, disregarding all meanings including abstract generalized ones. This, as a matter of fact, is the method Bertrand Russell says he used in his researches in mathematical logic.[4] It is one which mathematicians like Hilbert, to whom Carnap refers for illustration of his thesis, have found very fruitful. "The development of any abstract mathematical theory," says E. V. Huntington, "may be described in the last analysis as a process of writing down, one after another, a series of expressions . . . the term 'expression' . . . to denote any sequence of a finite number of marks on paper, to be read, say, from left to right."[5] Even the principle of the syllogism has been formulated, in the tradition, as a rule governing the manipulation of marks: *nota notae est nota rei ipsius;* whatever marks the mark of a thing marks the thing.

But there is a limit to meaninglessness if fruitful results are to be obtained. The *nota notae* formulation does talk about the mark *of the thing.* Russell thought of the subject-matter of logic rather

[4] *The Monist,* Vol. XXVIII (1918), p. 505.

[5] *Fundamenta Mathematicae,* Vol. XXV (1935), p. 147.

than the symbolism at least occasionally. (He specifies half a minute once in six months; but this may be some of his self-styled "romanticism.") He suggests that the good philosopher is one who does occasionally think of his subject rather than of his words and that the poor philosopher is one who never does. *Principia Mathematica,* which Carnap surely does not deny is logic, introduces a specific mark "$\vdash$," to indicate that it is making not private resolutions about the manipulation of marks but assertions about "logical" matters of fact which its authors believe to be true and upon the basis of the falsity of which they acknowledge themselves liable to be convicted of error.[6] Verbal resolutions can not be true or false; their authors can not conceivably be convicted of error for making them. The assertions of *Principia Mathematica* are not about the words and marks it uses to make its assertions: *pq* implies *qp* does not assert that "s-a-w" is the same as (or implies) "w-a-s" or that "P-r-a-g-u-e" is the same as "E-u-g-a-r-p." Its symbols are formal, as has been said, not because they have no meaning but because they have no single specific meaning. *Principia* does not seem to be formal, in Carnap's sense, when it says "Any symbol *whose meaning* is not determinate is called a variable, and the various determinations of which *its meaning* is susceptible are called the values of the variable."[7]

In a logistic development, at least the rules of procedure which specify how one is to manipulate the meaningless marks must not be meaningless. Else one would never even get started. The mathematicians themselves recognize that "formulas composed of symbols to which no meaning is attached can not define a procedure or justify an inference from one formula to another."[8] From the primitive formulas, certain other formulas (theorems) are derived; but the rules of operation which describe the derivation can not be meaningless, for otherwise there could be no derivation at all. Formalism (Carnap's sense) even as a methodology breaks down at some points.[9]

(3) Moreover, there is presumably some purpose in the linguistic manipulations. It can not be significant that entering the arcanum of mathematical logic with one set of squiggles one issues with another set. Presumably, one set of marks is more valuable than another. But then can they be utterly devoid of meaning? Says C. I. Lewis,

[6] I, pp. 8, 9.

[7] I, p. 4; my italics.

[8] A. Church, *Annals of Mathematics,* 2d Series, Vol. XXXIII (1932), p. 349.

[9] A. Lautman reports that at the Paris 1935 Congress of the logical positivists and others, there was opposition to Carnap's logical theories both from the Polish meta-logician, Tarski, and from the Hilbertian, Paul Bernays. *Revue de Métaphysique et de Morale,* Vol. XLIII (1936), pp. 117–118.

> There is one feature of mathematics, even as a system of marks, which is not, and can not be made, mechanical. . . . The derivation of "required" or "interesting" or "valuable" results will need an intelligent and ingenious manipulator.[10]

One should need to be superintelligent and superingenious, I should imagine, to make a meaningless set of marks an "interesting" or "valuable" result.

Carnap asserts manifold "foundational" problems in physics, psychology, biology, etc., to be problems in "logical syntax." But certainly, if the matter of "logical syntax" is arbitrary, where can there be a problem? One chooses the set of marks which pleases him most, and that is all there is to it. And how can questions as to the arrangements of marks affect problems in physics, etc.? Proceeding from Russell's maxim that logical constructions are to be preferred to inferred entities, Carnap attempts, in his book, *Der Logische Aufbau der Welt* (1928), to construct the external world from sense data with the use of logic. At that early date, the logic was still the *Principia*-edited traditional logic. Could he accomplish this same task with the new-fangled logic of counter manipulations? What miracle then is this which would enable one to create a world (or even a theory of the world) from marks on paper? How could the linguistic resolution, e.g. (I take a simple rule), always to write "s" after rather than before "t" inform us about the existence of inhabitants on Mars, say? That resolution is itself, of course, an empirical fact in the external world, but does it imply anything about the totality of facts, of which it is a minute (and rather insignificant) part? If resolutions about word-usage implied material facts, anyone could become a physicist by reading the dictionaries; and science would be transformed with each new edition of the lexicons.

The method of "logical analysis," with which Carnap hopes to contribute to the advancement of science, consists in the "translation" of a proposition about physics, e.g., to a proposition about language. "A thing is a complex of atoms" becomes "Every proposition in which a thing-name occurs is of equal content with a proposition in which no thing-names but space-time co-ordinates and physical functions occur."[11] But the second proposition is not equivalent to the first; the first is about "things" and the second is about names. Carnap's aid to the physicist consists in keeping him from talking physics. The physicist is not a great deal worried over the names for his facts; he is eager to know the facts and is quite willing, on the whole, either to let the linguist take care

[10] *A Survey of Symbolic Logic*, p. 360 n.

[11] *Philosophy of Science*, I (1934), p. 16.

of the words or to let the words take care of themselves. Carnap makes a similar proposal to the mathematicians engaged in a *Grundlagenstreit,* but to date it has not been embraced with any avidity. Apparently the mathematicians are not willing to stop talking mathematics merely in order to agree on linguistics.[12]

(4) Even if logic were linguistics, the "logic" which is the science of the implicatory relations between propositions could not be gainsaid by the "logic" which is linguistics. Rather, the former would be manifested in and hence confirmed by the latter. *pq* implies *qp* is true even when *p* is a proposition in linguistics—say, "Relative to Language I, it is permissible to form a sentence consisting of four 'words,' the first an 'article,' the second a 'noun,' the third a 'verb,' the fourth an 'adjective' "—and *q* is a proposition in linguistics—say, "Relative to Language II, a thing-name is not a property-name." Propositions about marks are propositions, and as such are subject to the principles of the propositional calculus. There may be disagreement as to what specifically those principles are, but that does not affect the position that they are principles about propositions, not about marks.

It is significant that Carnap invokes the familiar principles of the familiar logic to illustrate his "linguistic rules." Thus he cites the rule that from All *A* is *B*, and All *B* is *C*, one can infer All *A* is *C*— none other but the hoary syllogism in *Barbara.*[13] But he calls it a rule of the English language! He is not so bold as to defy it altogether, but is content to misname it. *Barbara* is a rule governing propositions which may be expressed in English sentences, but it is not a rule about English sentences or words. Can it be that Carnap is confusing books *in* English with books *on* English?

"In der Logik gibt es keine Moral," he says.[14] But if this were true, then one should feel no compunctions about dispensing with, say, the logical principle of consistency. If so, then Carnap should feel no qualms about contradicting himself: *"In der Logik gibt es ja Moral."* Logic is linguistics; therefore logic is not linguistics. Black is white; therefore black is not white. Carnap speaks of language *systems.* But surely this is a slip of the tongue. If no morality hampers the construction of languages, then one should be free to create inconsistent language rules. The result is then not a system but a hotch-potch. "There is a way," as Donald C. Williams says, "in which the principle of non-contradiction can not be gain-

[12] Ernest Nagel disposes of Carnap's mathematical claims with despatch. This JOURNAL, Vol. XXXIII (1936), p. 46.

[13] Except, of course, that the order of the premisses is reversed. *Philosophy and Logical Syntax,* p. 43.

[14] *Logische Syntax der Sprache,* p. 44.

said," for it is "indispensable to the very concept of system as system."[15] If there were no morals in logic, we should have not the *"Anwendungen"* Carnap feelingly describes in his *Abriss der Logistik* (1929) but anarchy.

The fact that we express our meanings in words so that when we talk meanings, we are also, of necessity, talking words has taken on a disproportionate importance for the positivists. Thus when Carnap "translates" propositions about "atoms," "sensations," and "experience" into statements about "thing-names" and "property-names," the impression is given that something significant and consequential is being done. What must be the reaction of those who complain of logic that it is trivial to Carnap's "logical analysis" of "The book is black" into "The first word is an article, the second a noun, the third a verb, and the fourth an adjective"! Words are tremendously useful in enabling us to know facts, and without symbolism thinking, of a very highly developed character at any rate, could not have occurred. But the primary thing, after all, is to know the facts; the words are secondary. A statement like "A thing is a complex of atoms" may be "translated" (but not reduced) into one like "Every proposition in which a thing-name occurs is of equal content with a proposition in which no thing-names but space-time co-ordinates and physical functions occur," but the truth (and significance) of the latter statement is dependent on and consequent to the truth of the former. Surely, a "thing-name" is a name *for* a *thing,* and a property-name is a name *for* a *property.* Even Carnap is not very successful in restricting himself to purely formal statement—as he understands "formal." "Space-time co-ordinates" and "physical functions" are not *linguistic* terms.

Logic may be described as the science of implicatory relationships between propositions. Sentences may be created. Grammar and linguistics describe the rules for creating sentences. Propositions, too, may be created: i.e., meanings may be assigned arbitrarily to sentences to make propositions. But the meanings of the propositions so created, and the implicatory relationships between them, are not arbitrary. Logic is the non-arbitrary science of these non-arbitrary and non-linguistic relationships.

II

In contrast with the linguistic theory of logic, the interpretation of logic as analysis, with which the names of Wittgenstein, Waismann, and Schlick are associated, does assert logic to be concerned

[15] *Philosophical Review,* Vol. XLII (1933), p. 408.

with meanings, but the meanings are analytically contained in other meanings, and although it is the business of logic to say which meanings are contained in which others, it is not the business of logic to assert that certain meanings are exemplified in nature and others are not. The so-called laws of logic are tautologies, such that the predicate merely analyzes what is contained, explicitly or implicitly, in the subject. One is doomed to disappointment if he expects to learn anything significant from logic. As the character in the De Unamuno novel said, the reason that A is A is the "truest of all truths" is just because there is nothing in it. Logic may help clarify one's thoughts about what one already knows, but logic can not add to one's stock of knowledge. Given a concept, logic may operate upon it to say what it entails; but logic can not provide the concept, to begin with, and it can not say whether the concept is actually exemplified in reality or not.

(1) The first, most modest, and most obvious retort to the complaint that the propositions of logic are true but not new, is that if they are true but not new, then they are true. When it both rains and pours, it rains. pq implies p. The free-thinking in logistics which Carnap recommends and condones can not be embraced by the adherents of the analytical faith. Which concepts shall be selected for analysis is arbitrary; and which meanings shall be given which words is arbitrary. But having decided upon the words and the meanings, it is not arbitrary what those meanings contain. It is arbitrary that I use the marks "table" instead of "kangaroo" for the familiar article of furniture; and it is a sheer whim of mine that I choose to analyze it rather than more noble topics, like "God," "freedom," or "the immortality of the God-freedom-immortality problem." But having determined the meaning, and having selected it for analysis, my freedom stops. I can not say that a table is an Australian animal with a strong tail and long legs, which jumps, any more than I can say that a kangaroo is an article of furniture. It is meaningful to ask of an analysis whether it is correct or incorrect. Analyses may be more or less complete, and it is legitimate to push one's analyses as far as one pleases. But one may not offer an incomplete analysis as a complete one, nor pan off an incorrect analysis as a correct one. *"In der Logik gibt es keine Moral"* does not hold if logic is analytics. It does not matter that for the analysis theory, there are no philosophical assertions; there are philosophical clarifications, and they may be well or poorly done.

"Clarifying our thoughts," says Schlick, "means discovering or defining the *real* meaning of our propositions. . . . All great revolutions in science . . . consist in the *discovery* of a new mean-

ing of the basic concepts (such as time, space, and substance)."[16] That is, there is a measure of objectivity in our meanings. If we constructed our meanings entirely as we chose, it would not make much sense to talk of "discovering" our "real" meanings. Any meaning we chose to construct would be as "real" as its contrary or any other. And the progress of science to which Schlick alludes comes about because the new definitions of the "basic concepts" have more justification in the real, objective world than the old ones. Not an occasional salutary "revolution," but a state of perpetual siege, would be the case if new content could be given haphazardly to old meanings by anybody who so yearned.

Whatever else, then, that logic as analytics is, it may and should be true.

(2) A second modest and obvious retort to the complaint that logic is true but not new is that psychological novelty, if that is what is meant (as it often seems to be), is a totally irrelevant consideration. It would be quite easy to answer the objection, made famous by Mill, that deduction yields no more than is "wrapped up" in the premisses by pointing out, with Holt, that "the most surprising things often come wrapped up."[17] But surprise has nothing to do with the matter at all. If surprise were a valid logical criterion, then the first time one performed a deduction, it would be valid; but unless one forgot it in the interim, the second and third times he performed the same deduction, it would be invalid! Before one reads a book on logic, its assertions are true; after one has read it, they are false!

I suspect that Schlick and Wittgenstein equally with the character in De Unamuno's novel are disappointed that the deliverances of traditional logic are not more startling than they are. A is A—! Why, any high-grade moron knows that! A is not non-A—A is or is not—if p or p is true, then p is true—if p and q are true, then p is true—etc.! One approaches the study of logic with the expectation that one's stock of knowledge will be increased—and the logician tells him that A is A! No wonder that Wittgenstein seeks revenge by telling the logician he says nothing. No wonder that Schlick deprives him even of autonomous existence.

I urge in his behalf that to say nothing new is not to say nothing, and that one should consider logic's inability to add to one's fund of knowledge cause for self-congratulation, not a defect in logic.

(3) The crucial question is, does logic really say nothing? What relevance has analysis to the world of facts? Schlick says philos-

[16] *Proceedings of the VIIth International Congress of Philosophy*, ed. Ryle, p. 114.

[17] E. B. Holt, *The Concept of Consciousness*, p. 12.

ophy is analysis, and because an analytic treatment of assertions is not an assertion, therefore there are no assertions in philosophy. Wittgenstein concludes that the propositions of logic are not assertions because they are analytic.

In the first place, there is scope for a science, descriptive or normative, of the principles of analysis. Natural science, it is said, will be pursued analytically, and philosophy is no more than the analytic method so used. Neither philosophy nor natural science so conceived will study the analytic method, philosophy because it is that method and science because it studies facts about the world by means of that method. Either, then, science will digress from its study of the world to study method, or philosophy will become self-conscious and reflective. It seems difficult to believe that there will not be some critical scientists who will wonder about the validity of the method they employ or that there will not be some curious philosophers who will wish to know the character of this method which constitutes the essence of philosophy. Then it seems likely that a sect of scientists (heretical, to be sure) will appear who will examine this method employed with so much confidence by the other scientists. It may be that in the study of analysis they will employ analysis, but they will still be differentiated from those who employ analysis but do not study analysis. They will issue forth, then, perhaps, with a set of assertions describing analysis as actually or as properly used. Perhaps to mark their divergence from other analysts, they will call themselves by a distinctive name, say methodologists, logicians, or philosophers?

An even stronger answer is possible: analytic assertions, whether they be about analysis or anything else, are assertions about matters of fact. It is false that (as Wittgenstein says) "I know e.g. nothing about the weather, when I know that it rains or does not rain."[18] It is a fact about the weather, that it either rains or does not rain. It is not a fact that it rains, but that is irrelevant. The fact that it snows in Siberia is a fact even if it says nothing about the weather in South America. It is no proof that a particular proposition asserts nothing to say that it does not assert something else. *A* is a proposition even if it is not *B*. You can not prove that "It either rains or does not rain" is not a fact about the weather by pointing out that it does not tell you whether it is raining. One thing at a time is all one can ask, even of a proposition in logic. It is necessary merely that a proposition of logic say something—not everything.

The situation might be clarified if the analysts were more explicit as to what precisely they mean by analysis. Wittgenstein tells

[18] *Tractatus Logico-Philosophicus*, prop. 4.461.

us that the propositions of logic assert tautologies and therefore do not assert, but he does not tell us what a tautology is. Schlick exhorts us to discover the "real" meanings of the concepts of time, space, and substance, but does not specify precisely what such discovery entails.

If we consult other sources, we find that Paul Weiss, who also writes that logic "is the science of formal tautologies," [19] and therefore says nothing,[20] defines a tautology as "an exhaustive set of alternatives." [21] Lewis and Langford, similarly, understand by Wittgenstein's doctrine of the tautological character of logic "that any law of logic is equivalent to some statement which exhausts the possibilities." [22]

Well, then, does such a law say nothing? Is it not a difficult task to exhaust the alternatives of a situation? Are not the results of such "analyses" often extremely significant? Lewis and Langford give the case away when, immediately after the statement I have quoted, they add, "whatever is affirmed in logic is a *truth* to which no alternative is conceivable." [23] But if what a law of logic says is nothing, how can what it says be true? There are no such entities as "true nothings." Truth and falsity are characters applying to significant propositions; if the laws of logic are tautologies, and if tautologies are truths so inescapable that there are no conceivable alternatives to them, then one can not be far wrong to believe that they are at least significant propositions. A tautology, it is said, is an analysis. If it is to be a true tautology, such that to it "no alternative is conceivable" then it must perform an *exhaustive* analysis of the subject-matter which it is analyzing. But whether its analysis is exhaustive or not depends upon the subject-matter in question. It is not a tautology that "It either rains or snows," for it may sleet or hail or remain clear, or there may be still another alternative. But it is a tautology that "It either rains or does not," for that exhausts the alternatives. That is a correct analysis, for it is a true proposition and hence a significant one.

Schlick, too, gives the case away when he refers to the "great revolutions in science" which have consisted in the "discovery" of new meanings in the basic concepts like time, space, and substance. For these "revolutions" have issued in assertions about matters of

[19] *The Monist*, Vol. XXXIX (1929), p. 312.

[20] *Ibid.*, p. 316.

[21] *Ibid.*, p. 312.

[22] *Symbolic Logic*, p. 24.

[23] *Ibid.* I should prefer not to use the term "conceivable." A healthy individual who tries hard enough can conceive anything, even a false law of logic. I should substitute "possible," "self-consistent," or even just "true," for "conceivable" in the quotation.

fact, and the "discoveries" have been expressed in propositions which have seemed to have had more evidence in their favor than propositions about previous "discoveries." Thus Kepler analyzed the concept of stellar motion, to discover new laws; Newton analyzed the concept of gravitation; Einstein has discovered provocative meanings in the concepts of simultaneity, motion, space, matter, etc.

Analysis of concepts is not to be confused with arbitrary definitions of words. In the latter case, we ascribe a meaning to a word or sound which otherwise has no meaning; in the former case, we analyze a meaning of which we are already aware as to its denotation, in order to discover all that it actually entails. It is the difference between calling ether a soporific because it puts one to sleep, and analyzing it as a dormitive agent in terms of chemical proporties and physiological reactions.

Analysis, in other words, is an empirical process. In logic what is experienced is more abstract and more general than what is experienced in the natural sciences; but it is none the less experienced. As against Wittgenstein, philosophy is one of the sciences. It does not restrict itself to spatio-temporal configurations, and it has no bias for the quantitatively measurable. It is a philosophical dogma which scientists took it upon themselves to make, that only the spatio-temporal is real. And it is an unscientific dogma which philosophers have made, that only sensation is experience. Philosophy is an empirical study of the world,[24] but the world is not space-time, and experience is not sensation.

Philosophy differs from the special sciences in its greater generality. The philosopher probes deeper and looks further than the scientist. It may be well for scientists to write philosophically, but philosophy can not be written by scientists except as appendices to their books on science. In that future which Schlick predicts in which there will be no philosophy but only philosophicalness, much will remain unsaid that should be said. Interests not restricted by a quantitative or sensationalistic bias will go unsatisfied.

As a matter of fact, the most thorough and profound analyses of the concepts which Schlick specifically cites, have been rendered by those who have been considered philosophers. On space and time, there have been Zeno, Parmenides, Aristotle, Bradley, Bergson, Kant, Descartes, Samuel Alexander, etc. On substance, there have been Spinoza, Descartes, the Milesians, the Pythagoreans, Leibniz, Aristotle, *et alii*. The result of these analyses has been a clarification of propositions and also at the same time a substantial set of propositions. If the positivist objects that these have not the right

[24] See S. Alexander, *Space, Time, and Deity*, I, Introduction, for a more detailed defense of this doctrine.

to be called analyses because they are metaphysical hence meaningless, one wonders whether he does not mean, rather, that they are false. Having examined their meaning and found them false, instead of calling them false he calls them meaningless. Thus Carnap objects to Thales that his principle that all is water permits of no verifiable implications.[25] The trouble with the water-principle, however, seems rather to be that there are a *host* of implications which are false to the point of absurdity. If all is water, then the air is water and we should all drown; we should be able to drink rocks and boil books; righteousness should be wet and God analyzable into hydrogen and oxygen. It is understandable that the positivist should be revolted by such puerilities. But it is because the water-principle has meaning—which he understands—that he can see it for a puerility. Some of the propositions of the philosophers are not so obviously false: e.g., every individual is a colony of sentient beings (Leibniz); non-being is not, and because empty space is non-being, empty space is not (Zeno). But if they are false, and if the positivist asserts (or means) them to be false, then my thesis is confirmed that analysis, as employed by the philosopher, may issue in significant propositions, for only a significant proposition can be false.[26]

The thesis is further confirmed if we take a specific example of an analysis. Again I must go to a non-Viennese source, but the author I have chosen (G. E. Moore) does not misrepresent the approach of the logical positivists, for the doctrine that philosophy is concerned with analysis is, as J. Wisdom says, "a doctrine which Wittgenstein has lately preached and Moore long practiced."[27] Wittgenstein and Carnap both studied under Russell, and Russell, especially in his earlier work, was appreciably influenced by Moore.[28]

Let us "analyze," says Moore, the proposition "Hens lay eggs," which is about the external world and one which, except for its triviality, the scientist could legitimately assert. A certain kind

[25] *Philosophy and Logical Syntax*, p. 17.

[26] A full discussion of the meaningfulness of metaphysics would involve me in too long a digression. I must content myself here with merely the dogmatic assertion that metaphysics (or cosmology) may be empirically (i.e., for the positivist, meaningfully) grounded and refer to the writings of S. Alexander (*Space, Time, and Deity*) and Bertrand Russell (*Scientific Method in Philosophy*, etc.) for a defense and clarification of that assertion.

[27] *Mind*, N. S. Vol. XL (1931), p. 195, n. 2.

[28] For Wittgenstein's relation to Russell, see the preface to *Scientific Method in Philosophy*, and the preface to the *Tractatus Logico-Philosophicus;* for Carnap's relation to Russell, see the preface to Carnap's *Abriss der Logistik;* for the relation of Moore to Russell, see Russell's *Problems of Philosophy*, *Philosophical Essays* and G. Santayana's essay, "The Philosophy of Bertrand Russell" in *Winds of Doctrine*.

of idealist would "discover" the "real" meaning of that proposition to be "A certain kind of collection of spirits or monads has a certain intelligible relation to another kind of collection of spirits or monads." Another kind of philosopher would analyze the proposition into "Certain configurations of invisible material particles sometimes have a certain spatio-temporal relation to another kind of configuration of invisible material particles." A third kind of philosopher would find that the result of his analysis was "Certain sensations of mine would, under certain conditions, have to certain other sensations of mine a relation which may be expressed by saying that the one set would 'lay' the other set." [29]

If philosophy is analysis, and if the result of analysis is propositions such as these, then I can not see how it is possible to say that "the result of philosophy is not a number of propositions, but to make propositions clear," and I can not see why anyone should think he had escaped (or destroyed) metaphysics when he made such "analyses." It takes no great amount of perspicacity to discover the metaphysics in Moore's analyses. The first proposition might be found in the metaphysics of what is variously known as spiritual pluralism, personal idealism, or panpsychism. The second represents Democritean atomic materialism. The third proposition could have been asserted by Mach or Avenarius or any other adherent to the metaphysics of sensation. But all three are propositions, all three "say something," and all three are metaphysical.

To the objection that philosophy should engage in the *process* of analysis, but not assert the propositions which are the end *product* of the analysis, the answer is that the distinction between the process and the product of analysis is improper. The merits of the analysis are judged by the propositions with which it issues, and analysis *in vacuo* is not analysis at all. To analyze A into B is to assert that A and B are equivalent; and if one accepts A, he must accept B. Presumably, the positivists do not wish to question the assertions of science which they wish to analyze. If so, then they must not question the propositions into which those assertions are to be analyzed. When one analyzes A into B, he asserts first that A is equivalent to B, and secondly he must assert B if he accepts A.

To summarize, analysis is of something—of a fact or of a possibility. If it is a fact, one must issue with fact; if it is a possibility, one must issue with a possibility. But the facts and possibilities with which one issues must be adequate to the facts and possibilities one analyzes. One's analyses should be valid and not invalid; i.e., in other words, one's analyses should be correct and not incorrect.

[29] *Philosophical Studies*, pp. 64–65.

It will not do to say "*In der Logik gibt es keine Moral,*" for even if philosophy is logic and logic analysis, philosophy still makes assertions which should be true and certainly may be, and which in addition are, apparently, metaphysical. If the analysis of analysis which I have performed is correct (and, at least, it *may* be), then the theory of logic, of logical positivism is incorrect, for philosophy may make assertions, and the assertions may be meaningful, significant, and true.

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PREDICATION OF EXISTENCE

THERE is no doubt that "existence" is a grammatical predicate, as witnessed by sentences such as "God exists," but, since the time of Kant's famous criticism of the ontological argument, it has been questioned whether the grammatical predicate "existence" stands for any genuine constituent in the meaning of the sentence, that is, in the proposition. Kant's own logic of rejecting "existence" as a predicate in a proposition, convincing as it is, has one flaw. Admittedly the sentence "God exists" has meaning as a whole, and to Kant the concept "God" is, likewise, a significant unified idea; hence by an obvious conceptual "subtraction" of the meaning *God* from the meaning *God exists* we should obtain *exists* as a meaningful predication. If, conversely, "exists" is a grammatical but not a conceptual predicate, then Kant must be wrong in believing that "God" is the proper subject of the proposition *God exists.* The finishing touch to Kant's argument, a denial that the grammatical subject which goes together with the grammatical predicate "existence" is a genuine unified concept, is found in the writings of Russell, who has explained that expressions such as "God" are, what he calls, "definite descriptions," which have no meaning in isolation from the context of a proposition, and, which, therefore, do not denote within the proposition a genuine constituent. Russell's theory of definite descriptions involves certain difficult technicalities, but his point, that a grammatical subject correlated with the grammatical predication of "existence" is not a unified thing, can be easily understood by examining sentences such as "Men exist" (or "Man exists"), in which no definite description is involved. It is obvious that every real man is a particular person, a Mr. Jones, or a Mr. Brown, and that we can not conceive of a single unified being who is a man in general, but no one in particular. Hence in saying "Man exists," we are not thinking of any actual being. According to Russell's explanation the sentence "Man ex-

ists'' is not about ''man,'' but about the adjective (or characteristic) ''human,'' to the effect that this adjective or characteristic is not a mere conception but has realization. Now to say that the adjective ''human'' has realization is the same as saying that at least one proposition of the kind to which ''Plato is human,'' ''My canary is human,'' and the like belong, is true. In other words, ''Man exists'' means that ''A true proposition, in which predication of the adjective 'human' takes place, can be found.'' When thus interpreted ''Man exists'' is seen to be neither about a ''man'' nor about ''existence,'' but about the truth-value of a certain proposition involving predication of the adjective ''human.'' This interpretation is given by Russell a symbolic form which is naturally read as ''There is (or there exists) an x such that x is human,'' but it would be a bad error to take this conventional reading as meaning that existence is attributed to an x.[1]

I should accept without restriction Russell's analysis of propositions such as ''Man exists,'' and I would even go so far as to agree that the only important sense of predication of ''existence'' is the sense in which some adjective is said to be realized. Clearly, it is not worth while mentioning that something exists, unless the contradictory is conceivable, that is, unless it is possible that there is nothing of the kind. In practice we raise the question of existence, only when we conceive an idea and then undertake to consider whether or not this conception has realization. This character of the practice of predicating ''existence'' presupposes a relationship between two ''realms,'' the region of concepts, which are directly given to the mind, and the field of actuality, which is not directly presented, but merely referred to when realization is either conceded or denied to a concept. Should there be no reference from one ''realm'' to the other, should one face a manifestation of actuality as such, there could be no question about its reality, and therefore no provocation for an assertion of its existence. Hence if ''significant'' means ''valuable'' or ''important,'' Russell is right when he says ''It is only of descriptions—definite or indefinite—that existence can be significantly asserted.'' And if ''significant'' means ''making

[1] In some of my previous papers I was guilty of such a misinterpretation, with the consequence of criticizing Russell's theory on the score of infinite regress. I argued that if ''Man exists'' means ''*There exists an* x which is human,'' then the italicized part of the latter expression must mean ''There exists a y which is an x,'' which in its turn would require a z, and so forth *ad infinitum*. My argument was based on the observation that since the symbol x is not a logical proper name it must be a description. The reader is referred to my book, *The Theory of Logic*, Harper & Brothers, 1936, in which it is explained that the variable x is neither a name nor a description, but has a different logical function of its own.

sense," predication of "existence," interpreted as an assertion of realization with regard to a concept, can not be significantly used except in connection with concepts: ". . . though it is correct to say 'men exist,' it is incorrect, or rather meaningless, to ascribe existence to a given particular x who happens to be a man." Where Russell fails, it is in his dogmatic assumption that not only predication of "existence" interpreted as "attributing realization to a concept" is insignificant in connection with a given particular, but that there is no situation in which to ascribe existence to a particular would be meaningful. I should think that, trivial as this meaning may be, there is a meaning in which everything, and therefore any directly given particular, can be said to exist. Furthermore, it is not difficult to show that in Russell's own interpretation of the sentence "Men exist" there is involved a predication of existence which is entirely different from "assertion of the realization of a concept."

Let us recall that "Men exist" stands for "The concept (or adjective) 'human' is a predication in some true proposition." Obviously, the phrase "some true proposition," as it stands in its context, means that "there exists a true proposition . . .," and this predication of existence to a true proposition is not equivalent to saying that the conception of the proposition is realized. For, in one sense of propositional realization, there is no difference between a conception of and a realization of a proposition: every conceivable proposition is meaningful and therefore is realized as a meaning. And if "propositional realization" denotes that the proposition is true, this sense is taken care of by qualifying the proposition as "true," and therefore is not imported through the predication of existence into the phrase "there is a true proposition . . .." The fact is that in saying "there is a true proposition . . ." one merely says that the true proposition is a member of the world in the same sense in which anything can be said to be a member of the world. Existence ascribed to a proposition is, indeed, one of the emptiest conceptions one could think of, for everything, short of nonsense, exists in the way a proposition does, dreams, illusions, pure fictions.[2] Predication of existence in this trivial sense does not involve reference through something realizable to some transcendent realization of it, but asserts immanent realization, the presence of the given as such. But empty as this predication is, it can not be dismissed as mere nonsense. At first one might think that the endowment of the grammatical predicate of "existence" with conceptual meaning, which is what the acceptance of the "triv-

[2] Perhaps ascribing existence to the world as a whole would be different in meaning from either the important or the trivial predication of existence, thus constituting a third kind of the conception of existence.

ial predication of existence" amounts to, would bring back certain difficulties which Russell's theory was planned to overcome. For example, if in the expression "there exists a proposition . . ." the words "there exists" stood for a genuine predication, one would expect "a proposition" to denote a genuine subject, but there is this difficulty that just as "a man" does not mean any particular man, so "a proposition" does not denote any proposition in particular and therefore can not function as a unified subject. Upon a closer examination, however, it will be found that to speak of "a proposition" is merely a loose way of referring to "the proposition that one is concerned with" and, therefore, ascribing existence to "a proposition" is a predication concerned with a perfectly definite entity.

This last point would not be accepted by logicians, who, following Russell, deny that a definite description stands for a single definite entity. I have criticized their negative position elsewhere, arguing that Russell's resolution of an ordinary definite description involves the use of symbols such as x, and that outside of the procedures of symbolic operations, where an x can be handled instrumentally as a mark on the paper, we always attribute to a symbol a conceptual significance of being a definite entity, the significance of a peculiar definite description which, unlike the ordinary definite descriptions, is ultimate and is not resolvable into a multiplicity of elements.[3] If my argument is correct, "the proposition (that one is concerned with)" is an ultimate definite description and thus can be a subject for the predication of existence.

Assuming that there are ultimate definite descriptions (denoting each a unified entity), of which "the proposition . . ." is one instance only, it is clear that it is significant to ascribe existence (in the trivial sense) to other things than propositions. But then the analysis of "Men exist" into "There is a true proposition involving the predication of the adjective 'human,'" although correct, is not the only one. The ordinary reading "There is an x such that it is human" would seem to be not merely a convention, but an alternative conceptual interpretation, if we let x stand for some such concept as "the individual . . ." and if this concept is, like "the proposition," an ultimate definite description.

The distinction between ordinary and ultimate definite descriptions makes allowance for a concise statement of the above theory of predication of existence. The predication of existence in the important sense amounts to the assertion that some adjectives, and, as a special case, the adjectives in terms of which an ordinary definite

[3] Cf. "The Definite Description," *Philosophical Review*, Vol. XLIII (1934), pp. 513–518.

description is analyzed, are realized. The predication of existence in the trivial sense refers to some ultimate definite description. This kind of predication, trivial as it is, is not meaningless; furthermore, as referred to the ultimate description "the proposition," it is an indispensable constituent in any thought in which the important predication of existence takes place.

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BOOK REVIEWS

Der Begriff der Wissenschaft bei Aristoteles. ANTON ANTWEILER. (Grenzfragen zwischen Theologie und Philosophie. I.) Bonn: Peter Hanstein. 1936. 120 pp. 3.80 M.

This is a collation of various passages relevant to Aristotle's theory of science, translated into German, critically explained, and systematized. The author holds that Aristotle did not start with a strict idea of science, that no general idea of science operated to regulate his separate investigations, and that he never succeeded in getting the idea clearly defined; but he did expressly endeavor to think through the problem, and in the course of this endeavor he made two very significant suggestions. The first was that science is hypothesis, or judgment, about things that are universal and necessary; the second, that science is established capacity to demonstrate. While the former is pointed toward things and the latter toward thought, the author suggests that they can be unified as the capacity for comprehending the universal by way of demonstration.

R. S.

The Philosophy of Spinoza, Unfolding the Latent Processes of his Reasoning. HARRY AUSTRYN WOLFSON. Cambridge: Harvard University Press. 1934. 2 Vols. xix + 440; xii + 424 pp. $7.50.

Books about philosophers and their philosophies seem to be inspired for the most part by one of two motives: to demonstrate that the philosopher expressed the truth or some part of the truth, or to explain what the philosopher meant. There has been an abundance of books on Spinoza devoted to the first purpose. Usually they are written in terms of some later philosopher, Kant, Hegel, or Constantine Brunner, who completes the statement of truth adumbrated by Spinoza. But however much the truth or greatness of Spinoza may have been elucidated in those works, only slight and incidental efforts have been made to render more precise the meaning of his propositions and demonstrations. The articles and occasional books

which have been devoted to that second purpose have gone for the most part not to the work of later philosophers but to that of some predecessor, to Descartes, Leo Hebraeus or Bruno, to seek materials for elucidation. But the task of filling in the background of Spinoza's discussions is rendered enormously difficult by the fact that Spinoza's work gives evidence, so unmistakable that the most convinced of the advocates of his modernity can not wholly miss it, of an acquaintance with and even considerable learning in medieval Hebrew philosophy, and enormous erudition is required to exploit fully that source of explanation. Occasional articles, in which medieval texts are cited to clarify difficulties in Spinoza, have confirmed the impression that light might be derived from Maimonides or Crescas or Gersonides. Professor Wolfson, however, has not only undertaken to apply those medieval sources systematically to the entire text of the *Ethics,* but he has enunciated a carefully conceived historical method to be followed in their employment. His work is at once a presentation and illustration of what he calls the "historico-critical method" and an explanation of the doctrines of Spinoza in the light of problems and discussions which uses Spinoza must have considered.

The method Professor Wolfson uses sets him a threefold task, the determination "of what the philosopher meant by what he said, how he came to say what he said, and why he said it in the manner in which he happened to say it" (Vol. I, p. vii). It is an historical method, critical only in an historical sense, for the chief interest of the author is "in the objective understanding of Spinoza's thought, rather than in passing criticism on it" (Vol. I, p. 177). The propositions of the *Ethics* are grouped, in the order of their occurrence, according to problems which are then traced through the discussions of earlier philosophers—not only those whom we know Spinoza read and those whom he might have read, but also if their doctrines or terms were current in his time, those whom we know he did not read. Sometimes in the case of important controversies the status of the problem is traced from Aristotle (Plato is quoted only a dozen times in the entire two volumes whereas Aristotle is quoted in explicit citation 335 times) through the Middle Ages and Renaissance into the early modern forms of the problem; sometimes when the doctrine has undergone little change, citations are set down from various periods to indicate the verbal changes that did occur. Not the least important of the devices which Professor Wolfson uses in the application of his method is the meticulous tracing of the evolution and translation of terms, Greek, Latin, Hebrew, Arabic, Dutch, so rendering clear not only what the terms must have meant to one acquainted with two or more of the lan-

guages but also the peculiar appropriateness, often forgotten in the later use of the term, which a given form of expression had for a given doctrine in a given context. Many of the problems that have recurred in commentaries on the *Ethics* dissolve into easy intelligibility under the illumination of the numerous parallel passages which Professor Wolfson is usually able to produce. It is no extravagance to say that he has more than vindicated his method, and that no future interpreter of Spinoza will be justified in feeling safe in his interpretation of a passage until he has consulted Professor Wolfson's treatment of the text.

In view of the consistent success with which Professor Wolfson attacks the series of problems that line the five books of the *Ethics* and the high intellectual morality which prevents him from dodging even the most difficult of them, it would be cavilling criticism to enter into the minutiae of any one argument selected for that purpose or to object to the interpretation he puts on any one of the passages quoted from Spinoza's predecessors. He frequently suggests, particularly in his discussion of the later books of the *Ethics*, that his quotations are not conclusive and that more illuminating passages may some day be found, and he is likewise aware that his interpretation particularly of Aristotle is in some points open to question; in the first case, since the task is an infinite one, extreme care, such as Professor Wolfson uses, is the only possible protection; in the second case, where the interpretation of Aristotle may be doubtful, he takes refuge in some medieval interpreter, who expresses the doctrine unmistakably and in a form in which Spinoza may have learned of it. It is rather more to the point, since this is so expert a use of a method for the study of philosophers, to comment on the effect of the use of the method and in particular on the conception of Spinoza's philosophy which results from it. Professor Wolfson's study presents several notable points of contrast, which may be taken as a point of departure, with interpretations that have viewed Spinoza in terms of later rather than earlier philosophers. In the first place, for good or ill, Spinoza is usually presented as a revolutionist and the herald of the modern spirit in one of its manifestations. When his statements are placed in the context of citations from the works of his predecessors, many of which it is clear he knew, the antecedents of his doctrines and the bonds that bind him to the past become so clear that Professor Wolfson is moved to add a final chapter, at the close of his exposition on "What is New in Spinoza?" and can supply psychological rather than logical reasons for such novelty as he finds. In the second place, Spinoza, the modern, is usually presented with a strong emphasis on methodological considerations, and the seventeenth-century

faith that philosophy would be reformed by lessons learned from mathematics is made a dominant character in his thought; Professor Wolfson has a chapter on the geometrical method (following one entitled "Behind the Geometrical Method") in which he finds medieval antecedents for the application of the method to philosophy which go back to Porphyry (Vol. I, p. 40) in the reduction of philosophic views to propositions, ancient antecedents "in the identification of the syllogistic form of demonstration with the Euclidean geometrical form or the transformation of one into the other" (p. 41), and direct imitation of Euclid as early as the twelfth century (p. 42). For these and a variety of other reasons the geometrical method has no logical connection with Spinoza's philosophy or his philosophic attitude, but his primary reason for choosing it was pedagogical, a desire for clearness and distinctness (p. 55), bolstered by the interest in literary forms born of the Renaissance and strengthened by a desire to avoid the necessity of refuting his opponents which would have been consequent on the employment of the traditional method.

As a result the reader is permitted to forget after the early pages of the first volume of Professor Wolfson's book that the *Ethics* is written in the geometrical manner. Instead, Professor Wolfson breaks the work up into the series of treatises which it would have contained if it had been written *more scholastico rabbinicoque*, fills in the outline they would then have followed and writes their appropriate prefaces. The geometrical method becomes a self-imposed shackle, in spite of which the clear outline of the scholastic argument is apparent (cf. Vol. I, p. 81 and passim), and frequently the propositions have the appearance of disjointedness and incongruity, because Spinoza does not follow "the most natural order" for the subject in question, the *a posteriori* order of Aristotle and his adherents in the Middle Ages, since he "considered himself bound by the self-imposed *a priori* method of his geometrical method" (Vol. I, pp. 370–372). Our historico-critical method is designed to study a method more fundamental than that used by Spinoza in the external form of the composition of his *Ethics*. "In our study of the *Ethics* we must try to follow the same method that Spinoza followed in writing it" (Vol. I, p. 4); we must reconstruct the process of Spinoza's reasoning in all its dialectical niceties and in all its fulness of detail (p. 7); we are frequently required to fill in "what he wanted to say" (cf. Vol. II, pp. 93, 112, 316 and passim), and we are told "what he means to say" (Vol. II, pp. 161, 175, 268 and passim); or after a particularly complicated statement of the evolution of some ancient terms, we are assured that Spinoza evidently has "all this in the back of his mind" (Vol. II, p. 219) or that

"scraps of statements like those of which we have constructed the preceding two paragraphs must have been floating in the mind of Spinoza" (Vol. II, p. 93). The relative emphasis which Professor Wolfson gives to the successive parts of the *Ethics* is further striking testimony of the effect of the method he used. In recent years interest has tended to center on the psychological and moral sections contained in Books III and IV of the *Ethics;* approaching by way of the Middle Ages, the emphasis is thrown on God and the relations of man to God: Book I *on God* (which occupies 39 pages in the Gebhardt edition) is expounded in 380 pages; Book II *on the Mind* (97 pages in Gebhardt) in 179 pages; Book III *on the Emotions* (68 pages in Gebhardt) in 41 pages; Book IV *on Human Servitude* (72 pages in Gebhardt) in 40 pages; Book V *on Human Liberty* (32 pages in Gebhardt) in 70 pages. The same doctrinal emphases account for the circumstance that Spinoza loses in Professor Wolfson's pages the Platonic character with which he was endowed by modern scholars (as by Brunschvicg and Gebhardt) and becomes instead an Aristotelian, for the problems he considers have a continuous history from the pages of Aristotle through the Middle Ages and, as Professor Wolfson puts it, "Platonic realism had no followers among the classical Jewish philosophers" (Vol. I, p. 148). The whole force of the historico-critical method is directed to emphasizing similarities, with the result that individual and systematic differences among philosophers disappear if the terms of their statement of a particular problem are continuous. It is striking how many differences between Spinoza and Aristotle become "inconsequential" (cf. Vol. II, p. 94 and passim) and a surprising number of differences between Aristotle and those who contradicted him turn out to be mere changes in terminology (cf. Vol. II, pp. 73–74). With respect to subjectivity and objectivity, there is little difference between Spinoza's and Aristotle's conception of time (Vol. I, p. 355); in his treatment of time in relation to duration Spinoza reverts to Plotinus (p. 358); yet the whole effort of Plotinus was to refute point by point the arguments of Aristotle concerning time, and there is in Spinoza, notwithstanding evidence of "little difference," essentially the same doctrine, set up in contradiction to Aristotle. Or again Aristotle argues against the existence of an infinite, indivisible extension, Spinoza for it; yet Spinoza "does not reject Aristotle's conception of the infinite as something divisible" (Vol. I, p. 286). Spinoza's attack on the doctrine of will and intellect is not in opposition to Aristotle, but rather an interpretation and development of his views (Vol. II, p. 169). Spinoza's consideration of the relation of modes to substance is explained by asserting that he says they exist in substance "in the same sense as when Aristotle says that

'the finger is *in* the hand and generally the part is *in* the whole,' and that 'man is *in* animal and generally species is *in* genus' '' (Vol. I, p. 75), yet the citations from Aristotle are from a passage in which he is engaged in distinguishing eight different senses of the word ''in'' and these are two of those different senses. Frequently Spinoza will take over part of the Aristotelian discussion and discard part (as Vol. II, p. 251), but no reason is offered for the selection. One has the impression, so frequent in reading commentaries and to which the author confesses (Vol. 1, p. 3), of philosophy as a jig-saw puzzle in which one can determine that there have been certain arrangements of the parts but no other reason need be sought than that it has been so: thus commentators in recent years (as Grant, Stewart, and Ross) have not been able to see reason for the number or order of the moral virtues in the *Nicomachean Ethics,* and so, too, Professor Wolfson (Vol. II, p. 253) sees no significance in the number or order of the virtues and vices of the fourth part of the *Ethics.* Similar problems of philosophic opposition arise at a number of the historical points of difficulty, such as the relation of definition to the existence of a thing, extension as an attribute of God and God as material, the nature of the infinite attributes, the possibility of an infinite regress, and so on, but in each case the difficulty reduces to the circumstances that stated doctrines become unexpectedly similar when the writings of philosophers are compared paragraph by paragraph, even those in whom the whole effort of one is to contradict the other. When finally we come to consider, in terms of such a doctrinal survey the peculiar doctrines of Spinoza it is not strange that they can be explained by no logical, but only by psychological reasons (Vol. II, 344) and that Spinoza's originality is reduced to five acts of daring: his doctrines of God's materiality, God's lack of external purpose, the inseparability of the soul from the body, man's lack of freedom and the peculiar form of man's immortality.

These remarks are no criticism of Professor Wolfson's book, but rather a characterization of his method. They can be summed up in medieval terms which Spinoza would have understood—and disapproved of. One may approach a philosophic text by three methods: a ''grammatical'' method in which the concern will be to determine by all materials and evidence available, what the text means, but there will be no concern, so long as that method is employed, to discover the truth or falsity of the text; a ''rhetorical'' method in which the concern will be to persuade the reader or the hearer, but so long as that method is followed there will be little concern either with the accuracy of restatement or the truth of the doctrine, though impressive machinery will be manipulated to carry conviction in

both respects; and finally a "logical" method, in which the truth or falsity of the doctrine is the chief concern. The first is a method of recovery, the second a method of persuasion, the third a method of demonstration. It is difficult to understand how the history of philosophy can be studied without the use of the first method, but it is not philosophy without the third, and it is interesting commentary on the nature of the study of the history of philosophy that in cases where earlier commentators on Spinoza have defended one of his doctrines with great plausibility, Professor Wolfson has been able to show their interpretation to be erroneous and has reinterpreted it to a new meaning in which he himself recognizes little plausibility. He has written a great book, one which will probably for a long time be indispensable to the understanding of what Spinoza said and one which may even be said to throw light on the latent processes of his reasoning. It is only an added mark of the greatness of the book that future readers may use it in the study of the text of the *Ethics* to discover for themselves what Spinoza proved.

R. McK.

Pensieri. FRANCESCO ORESTANO. 6th edition. Milano: Ulrico Hoepli. 1936. x + 302 pp. 12 l.

This book is a collection of reflections, most of which are in the form of aphorisms, about the most important aspects and problems of human life. The first edition of 1910 contained 101 "thoughts." This sixth edition contains 516. The reflections vary from the most homely topics of family relations to the most abstract topics of metaphysical inquiry. In his preface Orestano observes that this volume can well serve as an introduction to his philosophy because it contains the motifs and principal themes which are developed and demonstrated in the series of his theoretical treatises. The author's "pensieri" are characterized by a refreshing style, a critical sense, and a realistic temper. One may almost feel therein the whole force of the contemporary realistic reaction in Italy against "the vested interests" of Italian neo-idealism.

PASQUALE ROMANELLI.

BROOKLYN COLLEGE.

Time's Arrow in Society: A Philosophy of Progress. ANDERSON WOODS. Chicago: The University of Chicago Press. 1935. xi + 233 pp. $2.00.

Time's arrow points unerringly in the direction of what Royce would have called the Great Community, if we are to believe the author of this dissertation. Unlike Royce, however, he is a hedonist,

who sees in the refinement of desires by inclusion in larger and larger aggregates, an "inevitable tide of nature" flowing toward a state of world-equilibrium. "Egoistic desires are primary and can never disappear; but they are forced progressively to harmonize themselves, that is, to become more and more altruistic. The will of the self is not destroyed but becomes more and more subordinate to the general will" (p. 57). Using the "maximum pleasure" principle, the author works out generalized formulas for the distribution of wealth, death, and birth control, and what he calls "the spread of fortuity" or risk. In the course of his discussion he makes many timely and ingenious suggestions concerning human conduct. But his Plan or Design springing from Nature and reconciling opposites hitherto engaged in cut-throat competition seems like a throw-back to the Age of Reason, with progress assured by a careful selection of positive instances only.

H. A. L.

OTHER NEW BOOKS AND JOURNALS

Rousselot, Pierre: L'intellectualisme de Saint Thomas. Troisième Édition. Précédée d'une notice sur l'auteur et d'une bibliographie par Léonce de Grandmaison. (Bibliothèque des Archives de Philosophie.) xliii + xviii + 259 pp. 30 fr.

Winter, Ernst Karl: Rudolph IV. von Österreich. Erster Band, Zweiter Band. (Wiener Soziologische Studien, herausgegeben von Ernst Karl Winter, II, III.) Wien: Reinhold Verlag, 1934; Wien: Gsur & Co. 1936. xvi + 420 s; xv + 531 s. 12 s; 14 s.

THE INTERNATIONAL JOURNAL OF ETHICS. Volume XLVI, Number 4. War and Citizenship: *C. D. Burns.* Liberalism in Religion: *E. S. Ames.* The Measurement of Ethical Inconsistency in Marriage: *Clifford Kirkpatrick.* Ethics and Metaphysics: *Dorothy Walsh.* On a Fallacy in "Scientific Fatalism": *S. K. Langer.* Unionism and Separatism in Ethics: *J. H. Muirhead.* Discussion—Metaphysics of Gossip: *Henry Lanz.* On a Problem in Pure Aesthetics raised by Professor Laswell: *F. H. Knight.*

THE MONIST. Vol. XLVI, No. 2. The Principles of Philosophical Criticism: *Ledger Wood.* Duality and Dialectic: *J. W. Buckham.* On Public Objects and Private Objects: *Karl Britton.* Emergence and the Self: *H. B. Loughnan.* What is the Theory of Meaning About?: *Leo Abraham.* Mechanism and the Methodology of Science: *Benjamin Ginzburg.* Modern Science and Non-Aristotelian Logic: *O. L. Reiser.*

BULLETIN DE LA SOCIÉTÉ FRANÇAISE DE PHILOSOPHIE. 35e Année, No. 4. Dépopulation et Décadence. Allocution de *André Lalande.*

Exposé: *Adolphe Landry.* Discussion: *G. Benézé, Ed. Jordan, B. Lavergne, Mme. Lot-Borodine, W. Oualid, F. Pécaut, Roger Picard, G. Rodrigues, Weinberg.*

DIE TATWELT. 12. Jahrgang, Heft 2. Gibt es eine "Krise" der modernen physikalischen Forschung? *Pascual Jordan.* Der amerikanische Idealismus seit 1910: *E. S. Brightman.* Die Erkenntnislehre des C. G. Carus: *Käte Nadler.* Fichtes Philosophie der Tat: *Fritz-Joachim von Rintelen.* Die Rolle der Mathematik in der älteren und modernen Physik: *Aloys Wenzl.*

ERKENNTNIS. Band 6, Heft 2. Briefe von Richard Avenarius und Ernst Mach an Wilhelm Schuppe. Wilhelm Schuppe und die Einheit der Wissenschaft (Zu seinem hundertsten Geburtstag): *Wilhelm Fuchs.* Ungenauigkeit, Wahrscheinlichkeit und Unbestimmheit: *Martin Strauss.* Über einige Voraussetzungen de psychologischen Begabung: *Gustav Ichheiser.* Meanings in multi-valued logics: *W. M. Malisoff.*

NOTES AND NEWS

The Association for Symbolic Logic has been invited to hold a joint meeting with the American Mathematical Society as part of the latter's summer meeting at Harvard University this September. This is to be in connection with the celebration of the Harvard Tercentenary.

The meeting in which the Association will take part is to be held on Tuesday, September 1. The principal address is to be made by Professor Rudolf Carnap of the German University of Prague. The remainder of the session will be devoted to volunteered papers. After the session there will be a luncheon for members of the Association and other interested persons. It is expected that Professor Whitehead will speak. Information can be obtained from Mrs. Susanne K. Langer, 72 Raymond Street, Cambridge, Mass.

Professor Paul A. Schilpp of the College of the Pacific has been appointed Lecturer in Philosophy at Northwestern University. He assumes his new position in September 1936.

Dr. Alexander Litman has been promoted from Instructor to Assistant Professor of Philosophy at Yeshiva College, New York City.

Miss Ellen Bliss Talbot, Professor of Philosophy at Mount Holyoke College, retired in June with the title of Professor Emeritus of Philosophy. Dr. Roger Wellington Holmes, who has been for the past three years Instructor in Education at the College, has been appointed Assistant Professor of Philosophy.